

Amendments to the Claims

This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (Currently Amended) An orthodontic separator, said separator dimensioned such that it can be inserted between adjacent teeth, said separator being characterized in that when inserted between adjacent teeth in the oral environment, it exhibits an increase in compressive force, wherein said separator is in the shape of an o-ring, slab, coil, or dog bone.
2. (Original) The orthodontic separator according to claim 1, wherein the compressive force exerted by the separator increases by greater than about 5% within about 4 hours as measured by the Compressive Force Measurement Test Procedure.
3. (Original) The orthodontic separator according to claim 1, wherein said separator is a polymer that expands from an original volume V_0 to a volume V_1 in the oral environment, where $V_1 > V_0$.
4. (Original) The orthodontic separator according to claim 1, wherein said separator comprises a hydrophilic polymer.
5. (Original) The orthodontic separator according to claim 4, wherein said hydrophilic polymer absorbs between 6 and 120% by weight water.
6. (Original) The orthodontic separator according to claim 4, wherein said hydrophilic polymer undergoes a weight increase of between 50 to 70 % after immersion in water for 1 hour at 37°C.

7. Cancelled.
8. (Original) The orthodontic separator according to claim 4, wherein said hydrophilic polymer undergoes a volume increase of between 80 to 100% after immersion in water for 2 hours.
9. (Original) The orthodontic separator according to claim 4, wherein said hydrophilic polymer comprises a polyurethane.
10. (Original) The orthodontic separator according to claim 9, wherein said polyurethane comprises an aliphatic polyether polyurethane.
11. (Original) The orthodontic separator according to claim 4, wherein said hydrophilic polymer is selected from the group consisting of cellulosic polymers, polyamides, polyether polyamide copolymers, ethylene vinyl acetate copolymers, polyvinyl alcohol, polyvinyl acetate, polymethylmethacrylate, ethylene oxide copolymers, and combinations thereof.
12. (Original) The orthodontic separator according to claim 1, wherein said separator comprises a radio-opaque additive.
13. (Currently Amended) The orthodontic separator according to claim 1, wherein said separator comprises a pre-strained polymer shape memory material.
14. (Currently Amended) An orthodontic separator, said separator dimensioned such that it can be inserted between adjacent teeth, said separator being characterized in that when inserted between adjacent teeth in the oral environment, it exhibits an increase in compressive force, and wherein said separator comprises a The orthodontic separator

~~according to claim 13, wherein said shape memory material comprises a metal alloy, and wherein said separator is in the shape of a coil or washer.~~

15. (Original) The orthodontic separator according to claim 14, wherein said metal alloy comprises NiTi.
16. (Currently Amended) The orthodontic separator of according to claim 1, wherein said separator shape memory material comprises a shape memory polymer.
17. (Currently Amended) A method for separating a pair of adjacent teeth in a patient's mouth comprising inserting ~~an~~ the orthodontic separator of claim 1 between ~~the~~ adjacent teeth, wherein upon insertion said separator is water activated to exert sufficient force on the adjacent teeth to push the teeth apart ~~exhibits an increase in compressive force and wherein said separator is in the shape of an o-ring, slab, coil, or dog bone.~~
18. Cancelled.
19. (Original) The method according to claim 17 further comprising removing said separator from between the teeth by drying said separator with an air syringe.
20. (Currently Amended) The method of according to claim 28, 17 further comprising removing said separator from between the teeth by applying a compressed coolant gas to said separator.
21. (Currently Amended) A method for separating ~~a pair of~~ adjacent teeth in a patient's mouth comprising inserting an orthodontic separator consisting essentially of ~~comprising~~ a shape memory material between the teeth, wherein upon insertion said separator is heat activated to exert sufficient force on the adjacent teeth to push the teeth apart ~~and wherein said separator is in the shape of an o-ring, slab, coil, or dog bone.~~

22. (Original) The method according to claim 21, wherein the force exerted by the separator increases by greater than about 5% within about 4 hours as measured by the Compressive Force Measurement Test Procedure.
23. (Original) The method according to claim 21 further comprising removing said separator from between the teeth by applying a compressed coolant gas to said separator.
24. – 27. (Cancelled)
28. (New) A method of using the separator of claim 14, comprising inserting said separator between adjacent teeth, wherein upon insertion said separator is heat activated to exert sufficient force on the adjacent teeth to push the teeth apart.
29. (New) The orthodontic separator of claim 14, wherein said separator is in the shape of a coil which has an overall helical configuration, such that adjacent sections of the coil nest within each other when the coil is collapsed.
30. (New) The orthodontic separator of claim 14, wherein said separator is in the shape of a finger washer, wave washer, or domed washer.
31. (New) A method for separating adjacent teeth in a patient's mouth, comprising inserting the orthodontic separator of claim 1 between adjacent teeth, wherein upon insertion said separator is heat activated to exert sufficient force on the adjacent teeth to push the teeth apart.
32. (New) The method of claim 31, further comprising removing said separator from between the teeth by applying a compressed coolant gas to said separator.

Applicant : James D. Hansen et al.
Serial No. : 10/078,970
Filed : February 18, 2002
Page : 6 of 12

Attorney's Docket No.: 12950-001001 / 56512US002

33. (New) The orthodontic separator of claim 1, wherein said separator comprises a non-prestrained polymer.